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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/562,851

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Ingo Schwirtlich

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EXAMINER

SENE, PAPE A

ART UNIT

PAPER NUMBER

2812

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/562,851	<b>Applicant(s)</b> SCHWIRTLICH ET AL.	
	<b>Examiner</b> PAPE SENE	<b>Art Unit</b> 2812	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 29 December 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12/29/2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>01/27/2006</u> .  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Claim Objections***

1. Claims **3, 4, 5, 7, 10 and 11** are objected to because of the following informalities: Regarding claim 3, the phrase “the forces of the adhesion” should be “forces of adhesion”. Regarding claim 4 and 5, the phrase “the surfactant medium” should be “the medium”. Regarding claim 5, the phrase “paste-like substance” should be “substance”. Regarding claim 10, the phrase “in such as way that the hardened substance has a height” should be “in such a way that the substance, when hardened, has a height”. Referring to claim 11, the phrase “a support” should be “the support”. Referring to claim 12, the phrase “solvents” should be “solvent”. Referring to claim 7, the phrase “comes to” should be “is”, the word “ca.” is omitted as not having a meaning.
2. Referring to claim 1, applicant did not use a transition statement.
3. Appropriate correction is required.

### ***Specification Objection***

The following guidelines illustrate the preferred layout for the specification of a utility application. These guidelines are suggested for the applicant's use.

#### **Arrangement of the Specification**

As provided in 37 CFR 1.77(b), the specification of a utility application should include the following sections in order. Each of the lettered items should appear in upper case, without underlining or bold type, as a section heading. If no text follows the section heading, the phrase “Not Applicable” should follow the section heading:

- (a) TITLE OF THE INVENTION.
- (b) CROSS-REFERENCE TO RELATED APPLICATIONS.

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- (c) STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT.
- (d) THE NAMES OF THE PARTIES TO A JOINT RESEARCH AGREEMENT.
- (e) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISC.
- (f) BACKGROUND OF THE INVENTION.
  - (1) Field of the Invention.
  - (2) Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98.
- (g) BRIEF SUMMARY OF THE INVENTION.
- (h) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).
- (i) DETAILED DESCRIPTION OF THE INVENTION.
- (j) CLAIM OR CLAIMS (commencing on a separate sheet).
- (k) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).
- (l) SEQUENCE LISTING (See MPEP § 2424 and 37 CFR 1.821-1.825. A "Sequence Listing" is required on paper if the application discloses a nucleotide or amino acid sequence as defined in 37 CFR 1.821(a) and if the required "Sequence Listing" is not submitted as an electronic document on compact disc).

### ***Claim Rejections - 35 USC § 112***

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims **1-12** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim **1**, the phrases "such as" and "especially" render the claim indefinite because it is unclear whether the limitations following the phrase are part of the claimed invention. See MPEP § 2173.05(d).

Therefore claims **1-12**, which are all dependent of claim 1, are also rendered indefinite.

Regarding claim **4**, the phrase "such as" renders the claim indefinite because it is unclear whether the limitations following the phrase are part of the claimed invention. See MPEP § 2173.05(d).

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Regarding claim **10**, the phrase "especially" renders the claim indefinite because it is unclear whether the limitations following the phrase are part of the claimed invention. See MPEP § 2173.05(d).

Regarding claim **8**, it is not definite what diameter from what view of what element, the applicant is referring to.

### ***Examiner's Comments***

The claims are interpreted by the examiner in the most convenient way possible to understand the invention.

Claim 1 does not have a transition statement; it has been amended by the examiner to have a proper format

### ***Claim Rejections - 35 USC § 102***

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims **1-7 and 12** are rejected under 35 U.S.C. 102(b) as being unpatentable by Lee (U.S. Patent No. 6,406,646).

1. Referring to claim **1**, Lee discloses a method for constructing a linear and/or punctiform structure on a support comprising, applying an electrically conducting paste-like substance (**paste composition, Col. 1, Ln. 62-65 and Col. 2, Ln. 17-23**) containing a solvent adhering to a support and subsequent hardening of the substance (**Col. 4, Ln. 32-44**), wherein, after the substance is applied to the support, a medium containing a polar molecule is applied on the support and/or the substance (**Col. 4, Ln. 45-51 and 56, wherein the medium is surfactant**), through which the solvent contained in the substance is extracted (**Col. 5, Ln. 3-13, wherein drying the coated substrate, extracts the organic solvent contained in the paste composition**).

2. Referring to claim **2**, Lee discloses a method according to claim 1, wherein the medium is applied on the support to the extent that a flowing of the substance along the

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support is prevented or largely prevented while avoiding a detachment of the substance from the support **(Col. 4, Ln. 45-51 and 56, wherein the medium is surfactant)**.

3. Referring to claim 3, Lee discloses a method according to claim 1, wherein forces of adhesion between the medium and the support are greater than the forces of adhesion between the substance and the support **(Col. 4, Ln. 45-51 and 56 and Col. 1, Ln. 62-65 and Col. 2, Ln. 17-23, wherein surfactant bond much better to a glass substrate than the paste composition)**.

4. Referring to claim 4, Lee discloses a method according to claim 1, wherein water and anionic surfactants and/or cationic surfactants and/or amphoteric surfactants and/or non-ionic surfactants is used as the surfactant medium: surfactant **(Col. 4, Ln. 45-51 and 56)**.

5. Referring to claim 5, Lee discloses a method according to claim 4, wherein the surfactant medium is applied on the support in the form of a liquid or a foam in the region of the applied paste-like substance **(Col. 4, Ln. 45-51 and 56, wherein the medium is applied in the form of a liquid)**.

6. Referring to claim 6, Lee discloses a method according to claim 1, wherein the paste-like substance is applied to the support preferably by means of screen printing, tampon printing, finger writing techniques and/or spraying techniques: screen printing **(Col. 5, Ln. 3-13)**.

7. Referring to claim 7, Lee discloses a method according to claim 1, wherein the medium is applied to the support and/or the substance within a time interval  $\Delta t$  after applying the substance, whereby the time interval  $\Delta t$  is 0.1 seconds to 600 seconds, preferably 1 second to 60 seconds: 300 seconds **(Col. 5, Ln. 3-13, wherein the surfactant is applied after drying the substrate for 300 seconds)**.

12. Referring to claim 12, Lee disclose a method according to claim 1, wherein a concentration gradient between the medium to be applied to the support and/or the substance and the substance is set with respect to the solvents present in the substance such that the solvent of the substance is extracted from the medium **(Col. 4, Ln. 45-51 and 56, Col. 5, Ln. 3-13, wherein drying the coated substrate, extracts the organic solvent contained in the paste composition)**.

### ***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

10. Claim **9** is rejected under 35 U.S.C. 103(a) as being unpatentable over Lee (U.S. Patent No. 6,406,646) in view of Grolemond (U.S. Patent No. 6,387,997).

9. Referring to claim **9**, Lee discloses a method according to claim 1. However, Lee does not disclose that water soluble and water insoluble solvents are added to the substance.

Grolemond teaches an electrically conducting paste-like substance containing a solvent (**Col. 15, Ln. 36-50, wherein the substance is the film forming composition, and the solvent is the hydrophilic crosslinking agents**), wherein water soluble and water insoluble solvents are added to the substance (**Col. 16, Ln. 46-62**).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made, to modify the disclosure of Lee, to further disclose the teaching of Grolemond, for the purpose of adapting the substance to be hydrophilic (**Col. 15, Ln. 51-54, Grolemond**).

11. Claims **10** is rejected under 35 U.S.C. 103(a) as being unpatentable over Lee (U.S. Patent No. 6,406,646) in view of Kleiner (U.S. Patent No. 4,610,808).

10. Referring to claim **10**, Lee discloses a method according to claim 1. However, Lee does not disclose that wherein the substance is applied punctiform, linearly or strip-like to the support in such as way that the substance, when hardened, has a height to breadth ratio a, with in particular less than or equal to 1.0 and greater than or equal to 0.1.

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Kleiner teaches an electrically conducting paste-like substance containing a solvent wherein the substance is applied punctiform, linearly or strip-like to the support in such as way that the substance, when hardened, has a height to breadth ratio a with in particular less than or equal to 1.0 and greater than or equal to 0.1 (**Col. 5, Ln. 56-60**).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made, to modify the disclosure of Lee, to further disclose the teaching of Kleiner, for the purpose of specifying that the low aspect ratio of the substance, when hardened, provides better electrical conductivity (**Abstract and Col. 5, Ln. 32-60, Kleiner**).

12. Claims **11** is rejected under 35 U.S.C. 103(a) as being unpatentable over Lee (U.S. Patent No. 6,406,646) in view of Kleyer (U.S. Patent No. 6,465,550).

11. Referring to claim **11**, Lee discloses a method according to claim 1, wherein a substrate made of alumina is used as a support. However, Lee does not disclose that a silicon substrate with a surface layer consisting of silicon oxide and/or silicon nitride is used as the support.

Kleyer teaches a method of applying an electrically conducting paste-like substance (**silicone composition, Col. 1, Ln. 6-12**) on a support, wherein a silicon substrate with a surface layer consisting of silicon oxide and/or silicon nitride is used as the support: silicon nitride (**Col. 9, Ln. 6-11, wherein the support is the substrate**).

It would have been to a person of ordinary skill in the art at the time the invention was made, to modify the disclosure of Lee, to further disclose the teaching of Kleyer, for the purpose of applying the substance to the substrate (**Col. 10, Ln. 44-47, Kleyer**).

### **Conclusion**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to PAPE SENE whose telephone number is (571)270-5284. The examiner can normally be reached on 5/4/9.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Charles Garber can be reached on (571)272-2194. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/PAPE SENE/  
Examiner, Art Unit 2812

/P. S./  
Examiner, Art Unit 2812

/Walter L. Lindsay, Jr./  
Primary Examiner, Art Unit 2812